Docket No.: 826.1791

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of:

Nobuyuki NEMOTO et al.

Serial No. 10/078,488 Group Art Unit: 2633

Confirmation No. 4891

Filed: February 21, 2002 Examiner: Agustin Bello

For: CONTROLLING SYSTEM FOR USE WITH VARIABLE ATTENUATORS

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Final Office Action in the above-identified application, and pursuant to the Notice of Appeal filed February 21, 2006, Applicants submit this Brief with the fee of $500.00 set forth by 1.17(c). A Petition for Extension of Time and the required fee of $____ requesting a one-month extension has been concurrently filed herewith extending the period for filing this brief to May 21, 2006.

(I) Real Party In Interest

The real party in interest in this appeal is the assignee Fujitsu Limited.

(II) Related Appeals and Interferences

The undersigned attorney, the appellant and the assignee know of no related appeals or interferences which would be directly affected by or directly affect or have a bearing on the Board's decision in this appeal.

(III) Status of Claims

Claims 1, 2, 6 and 7 have been cancelled and claims 3-5 and 8-10 remain pending and are appealed.

(IV) Status of Amendments

No amendments have been filed subsequent to the final rejection. An argument asserting the patentability of the claims was submitted on January 20, 2006. In response thereto the Examiner mailed an Advisory Action on February 7, 2006 stating, "the examiner maintains that the cited references teach the limitations in question."

(V) Summary of the Claimed Subject Matter

The claimed subject matter emphasizes a system or method in which information is optically transmitted using wavelength division multiplexing (WDM) where each different wavelength carries a different signal. In particular, the claimed subject matter is about what happens when one of the signals that have been multiplexed is dropped. The system includes adjustable or variable attenuators (23-n, fig. 7, page 20, line 5-page 22, line 14) assigned to each wavelength component where the attenuators adjust the power level of each of the optical wavelength signals or components. During operation, optical level detecting units (24-n, fig. 7) detect output signal levels and a feed-back circuit (26, fig. 7) adjusts optical attenuation amounts of the attenuators to a target value representing the optical power level of each the multiplexed signal level components. That is, during operation when a signal component is available to be multiplexed, the power level of the signal component is adjusted to a target attenuation that corresponds to a desired power level (fig. 9 & page 24, line 12-page 25, line 14). When one of the signal components is dropped or disconnected, the attenuation amount of the attenuator for that component is set to a predetermined attenuation setting or amount (fig. 10, page 25, line 15-page 27, line 14, particularly step S14, page 27, lines 1-8). In particular "when an optical signal component of a wavelength of the WDM optical signal is disconnected, the feed-back circuit sets the attenuation amount of a variable attenuator assigned to the optical signal component to a predetermined value" - claims 3 and 8. The predetermined attenuation amount can be an amount that prevents a downstream or next stage unit from being destroyed by an abrupt signal (fig. 6, page 17, line 12-page 18, line 11) - claims 4 and 9. The predetermined amount of attenuation can also be set at a maximum (fig. 11, step S24, page 28, lines 9-12) - claims 5 and 10.

(VI) Grounds Of Rejection To Be Reviewed On Appeal

The final Action, on page 2, rejected claim 4 as indefinite under 35 USC 112, paragraph 2, and this ground of rejection is requested to be reviewed on Appeal.

The final Action, on page 2, rejected claims 3 and 8, over Ford (US Patent 6,392,769) as anticipated under 35 USC 102(e) and this ground of rejection is requested to be reviewed on Appeal.

The final Action, on page 3, rejected claims 4, 5, 9 and 10 as obvious under 35 USC 103 over Ford (US Patent 6,392,769) with Minamimoto (US Patent 6,839,518) and this ground of rejection is requested to be reviewed on Appeal.

(VII) Argument

A. Indefiniteness Rejection Under 35 USC 112, para. 2

In the rejection the Examiner alleged as the bases for the rejection that claim 4 fails "to conform with current US practice", "appear to be a literal translation" and is "replete with grammatical and idiomatic errors".

The Examiner has asserted without basis in example or otherwise where the alleged grammatical and idiomatic errors exist in claim 4. The Examiner has thus not provided a reasoned basis or rational for the rejection. The rejection is traversed for this reason.

The Examiner has asserted without basis in example or otherwise why the claims fail to conform to current US practice and has again provided no reasoning or rational for the rejection. The rejection is traversed for this reason.

The Examiner has asserted without basis in example or otherwise why the claim 4 that is alleged to be a literal translation fails to be definite and has again provided no reasoning or rational for the rejection. The rejection is traversed for this reason.

In rejecting a claim under the second paragraph of 35 USC 112, it is incumbent on the examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims. (See Ex parte Wu, 10 USPQ 2d 2031, 2033 (B.P.A.I. 1989)) It is submitted that the Examiner has not satisfied this burden for a prima facie rejection of indefiniteness.

It is a recognized and acceptable claim practice "to define something ... by what it does rather than by what it is" and "there is nothing intrinsically wrong with the use of such a technique in drafting patent claims. Indeed we have even recognized in the past the practical necessity for the use of functional language." (See In re Swinehart, 169 USPQ 226, 228 (C.C.P.A. 1971)) The Examiner has ignored this premise of the law.

Effect must be given to all of the limitations of claim 4 ("We note at the outset that the claim limitation . . . must be given effect since we must give effect to all claim limitations." In re Angstadt, 190 USPQ 214, 217 (C.C.P.A. 1976)). The Examiner has not done this.

Further, claim 4 clearly states that the attenuator amount is set low but not so low that an abrupt signal input destroys a transmitter of the next stage in the transmission path and so that and output level of the attenuator can be used by an optical detection unit to detect such an abrupt signal. It is submitted that claim 4 is clear and definite.

"Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire. Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used, but should not reject claims or insist on their own preferences if other modes of expression selected by applicants satisfy the statutory requirement." (See MPEP 2173.02 Clarity and Precision). The Examiner has permitted no such latitude, has made no such suggestions and is submitted to have improperly based the rejection the Examiner's own preferences.

It is submitted that claim 4 must not be indefinite as the Examiner asserted an understanding of claim 4, consistent with the description thereof discussed above (see Action, page 4, lines 16-20), sufficient to apply prior art to claim 4 in an obviousness rejection. It is submitted that the claim 4 is not indefinite based on the Examiners actions.

Further the wording of claims 4 and 9, subsequent to the preambles, is identical and yet claim 9 has not been rejected as indefinite. If claim 9 is not indefinites, then so should be claim 4.

Reversal of the rejection for indefiniteness is requested for the above-discussed reasons.

B. Rejection of Claims 4, 5, 9 and 10 under 35 USC 103 as Obvious over Ford and Minamimoto

The present application was filed on February 21, 2002. Minamimoto was filed on October 25, 2000 and issued on January 4, 2005. As a result, Minamimoto does not qualify as prior art under either 35 USC 102(a), 102(b), 102(d) or 102(g) (with 102(c) and 102(f) being in applicable in this case). Minamimoto, if it qualifies as prior art alt all, may do so under 35 USC 102(e).

Minamimoto is assigned to Fujitsu Limited as shown on the face of the Minamimoto patent. The present application is also assigned to Fujitsu Limited as shown by the assignment recorded in the USPTO on February 21, 2002 at reel 012611 and frame 0954. It is submitted that the subject matter of Minamimoto and the claimed invention of the above-identified application were, at the time the claimed invention was made, owned by the same company (Fujitsu Limited) or subject to an obligation of assignment to the same company (Fujitsu Limited).

As stated in 35 USC 103 (c) (1) states "Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person."

It is submitted that Minamimoto does not qualify as prior art and reversal of the rejection of claims 4, 5, 9 and 10 is requested.

C. Rejection of Claims 3 and 8 under 35 USC 102(e) as Anticipated by Ford

The present invention, as set forth in independent apparatus claim 3, emphasizes a system in which information is optically transmitted using wavelength division multiplexing (WDM) where each different wavelength carries a different signal. In particular, the invention is about what happens when one of the signals that have been multiplexed is dropped or "disconnected". The system includes adjustable or "variable attenuators" assigned to each wavelength component to adjust the power level of each of the optical wavelength signals. During operation, "optical level detecting units" detect output levels and a "feed-back circuit" controls "adjustments" of the "optical attenuation amounts" of the attenuators to a "target value" representing the "optical power level" of each the multiplexed signal level components. That is, during operation when a signal component is available to be multiplexed, the power level is adjusted via a target attenuation that corresponds to a desired power level. When one of the signal components is dropped or disconnected, the attenuation amount of the attenuator for that component is set to a predetermined attenuation setting or amount. As recited in claim 3, "when an optical signal component of a wavelength of the WDM optical signal is disconnected, the feed-back circuit sets the attenuation amount of a variable attenuator assigned to the optical signal component to a predetermined value".

In asserting that Ford teaches this aspect of the present invention, the Examiner alleged:

> Ford also teaches that when an optical signal component of a wavelength of the WDM optical signal is disconnected (e.g. dropped according to the "add/drop configuration" described in col. 4, lines 20-31), the feedback circuit sets the attenuation amount of a variable attenuator assigned to the optical signal component to a predetermined value (column 2, lines 29-35).

(See 9/20/5 Action, page 3)

This text of Ford referenced by the Examiner particularly states:

> As previously discussed, to carefully optimize system performance it is necessary to determine the type of node utilized (i.e., 103, 104 and 105) at the various system node locations so as to be able to compensate for the various impairments which occur due to WDM channel add/drop reconfiguration, optical protection switching, incorrect power levels, crosstalk, self-phase and cross-phase modulation, etc. Moreover, while it is desirable to automate power level control at these nodes, control must be accomplished without causing the unstable and chaotic power level oscillations described in the previously referenced Yoo article.

(See Ford, col. 4, lines 20-31)

> More particularly, in accordance with our invention, an optical control apparatus comprises a control signal monitor and an adjustable optical transmission unit. The control signal monitor is responsive to a detected first state of an input global control signal for outputting a output global control signal at a first state, and is responsive to a detected second state of the input global control signal for outputting the output global control signal at the first state and for generating an enable signal. The adjustable optical transmission unit is responsive to the enable signal for controlling the output signal level of a received input optical signal. The adjustable optical transmission unit is (1) responsive to the enable signal for **adjusting the output signal level to a predetermined level** and for generating the okay signal when the output signal level adjustment is completed, and (2) responsive to the absence of said enable signal for **maintaining the output signal level at its existing level**. The control signal monitor is responsive to the okay signal for outputting the output global control signal at a second state.

(See Ford, col. 2, lines 21-39, inclusive of lines 29-35, **bold** emphasis added)

As can be seen from the above text, Ford discusses add/drop impairment compensation. In adjusting for a drop Ford adjusts a signal level, to either a predetermined level or to maintain an existing level. This text says nothing about adjusting an "attenuation amount of a variable attenuator assigned to the optical signal component to a predetermined value" when a disconnect occurs, as recited in claim 3. This attenuation feedback adjustment when a disconnection or input signal cutoff occurs helps prevent optical surges that can be damaging to the optical units of the transmission path. It is submitted that setting a signal level at a predetermined or existing value is very different from setting an attenuation amount at a predetermined value.

The attempt to maintain a signal level at a predetermined or existing level when a drop occurs, it is submitted can cause optical surges because the different stages in the path will independently attempt to adjust their own signal level, just the thing that the present invention is designed to stop. Ford recognizes this problem with optical surges and addresses it by a staged adjustment process that keeps downstream nodes from performing an adjustment (see Ford, col. 6, lines 31-47).

In an interview conducted with the Examiner on December 29, 2005, the Examiner asserted that holding a signal level at an existing value when a drop occurs is equivalent to setting an attenuation amount to a predetermined amount. This is not the case.

Adjusting an output signal level to maintain a predetermined level or an existing level as an input signal fluctuates requires that the attenuation of the path be adjusted. By analogy between attenuation and resistance, if a voltage is to be maintained as a current varies the resistance that provides attenuation must be changed. Using the conventional equation V=IR, if the voltage is to maintained at, say, 10 volts and the current fluctuates from 1 to 10 amps, the resistance must be changed from 10 volts = 1 amp * 10 ohms to 10 volts = 10 amps * 1/10 ohms. In contrast, if the resistance that provides attenuation is held constant as the current changes, the voltage actually changes: 10 volts = 1 amp * 10 ohms, 100 volts = 10 amps * 10 ohms. By analogy, if an optical signal output level is maintained at a predetermined or existing level while the input signal changes, the attenuation must change not stay constant or at a predetermined amount as called for in claim 3. Ford inherently requires that the attenuation amount change by requiring that the signal level be maintained, which is the opposite of what is called for in claim 3.

Further, an attenuator is defined as:

> attenuator: a device for attenuating; especially: one for reducing the amplitude of an electrical signal without appreciable distortion (Merriam-Webster Online Dictionary copyright © 2005 by Merriam-Webster, Incorporated)

As can be seen from the above definition, an attenuator that attenuates by a predetermined value amount will reduce the amplitude of a signal. This is the opposite of what Ford intends by asserting the goal of maintaining a signal level at a predetermined or existing level.

It is submitted that Ford does not teach or suggest setting an "attenuation amount" of a WDM component to a "predetermined value" when the signal of the component is "disconnected" as recited in claim 3 and actually teaches away from such.

Independent method claim 8 also emphasizes the setting an "attenuation amount" of a WDM component to a "predetermined value" when the signal of the component is "disconnected" and is patentable over Ford for the above discussed reasons.

D. Dependent Claims 4, 5, 9 an 10

The dependent claims 4, 5, 9 and 10, even though these claims have not been rejected over Ford alone, depend from the above-discussed independent claims and are patentable over the prior art for the reasons discussed above. The dependent claims also recite additional features not taught or suggested by the prior art, as discussed below.

For example, claims 4 and 9 emphasize that the attenuation level is set so that a downstream optical transmitter is not destroyed by an abrupt signal. Ford says nothing about this. And by the way, neither does Minamimoto, if it were prior art, as the portion of Minamimoto pointed-to by the Examiner for this feature (Minamimoto, col. 5, lines 18-29) addresses determining a normal dynamic range of an input signal or an amplifier but says nothing about setting an attenuation value upstream that will prevent distraction by an abrupt signal.

Dependent claims 5 and 10 call for the feedback circuit to set the attenuation amount at a maximum amount. Once again Ford says nothing about this. The Examiner argues, on page 5 of the Action, that because Ford is capable of making any adjustment to attenuation that is necessary, Ford is capable of maximizing the attenuation amount. Just because a thing is capable of doing something does not provide a teaching or suggestion that such be done. The Examiner is merely calling for further experimentation.

It is submitted that the dependent claims are independently patentable over the prior art.

E. Conclusion

It is submitted that the Examiner has not made a prima facie case of obviousness by preponderance of the evidence and reversal of the rejection is requested.

Respectfully submitted,

STAAS & HALSEY LLP

Date: _____ By: _____

J. Randall Beckers
Registration No. 30,358

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501

VIII. Claims Appendix

1. (canceled)

2. (canceled)

3. A controlling system for use with variable attenuators disposed in a WDM transmitting apparatus for adding and dropping a WDM optical signal, the controlling system comprising:

a plurality of variable attenuators for adjusting optical power levels of optical signal components of individual wavelengths demultiplexed from the WDM optical signal;

a plurality of output optical level detecting units detecting the output optical levels of the plurality of variable attenuators; and

a feed-back circuit for controlling adjustments of the optical attenuation amounts of the plurality of variable attenuators,

wherein optical signal components of individual wavelengths whose power levels have been adjusted by the plurality of variable attenuators are multiplexed and thereby a WDM optical signal is generated and transmitted,

wherein a target value is set for the feed-back circuit, the target value representing the optical power level of each of the optical signal components of individual wavelengths , and

wherein when an optical signal component of a wavelength of the WDM optical signal is disconnected, the feed-back circuit sets the attenuation amount of a variable attenuator assigned to the optical signal component to a predetermined value.

4. The controlling system for use with the variable attenuators as set forth in claim 3, wherein the predetermined value of said variable attenuator is as low as an optical signal that is transmitted from the WDM transmitting apparatus corresponding to an abrupt optical input does not destroy a WDM transmitting apparatus disposed on the next stage and as the output optical level detecting unit can detect an output optical level of the variable attenuator corresponding to the abrupt optical input.

5. The controlling system for use with the variable attenuators as set forth in claim 3,

wherein the feed-back circuit maximizes the attenuation amount of a variable attenuator assigned to an optical signal component of an unused wavelength.

6. (cancelled)

7. (cancelled)

8. A controlling method for use with variable attenuators disposed in a WDM transmitting apparatus for adding and dropping a WDM optical signal, the controlling method comprising:

causing a plurality of variable attenuators to adjust optical power levels of optical signal components of individual wavelengths demultiplexed from the WDM optical signal;

causing a plurality of output optical level detecting units to detect the output optical levels of the plurality of variable attenuators; and

causing a feed-back circuit to control adjustments of the optical attenuation amounts of the plurality of variable attenuators,

wherein optical signal components of individual wavelengths whose power levels have been adjusted by the plurality of variable attenuators are multiplexed and thereby a WDM optical signal is generated and transmitted,

wherein a target value is set to the feed-back circuit, the target value representing the optical power level of each of the optical signal components of individual wavelengths, and

wherein when an optical signal component of a wavelength of the WDM optical signal is disconnected, the feed-back circuit sets the attenuation amount of a variable attenuator assigned to the optical signal component to a predetermined value.

9. The controlling method for use with the variable attenuators as set forth in claim 8,

wherein the predetermined value of said variable attenuator is as low as an optical signal that is transmitted from the WDM transmitting apparatus corresponding to an abrupt optical input does not destroy a WDM transmitting apparatus disposed on the next stage and as the output optical level detecting unit can detect an output optical level of the variable attenuator corresponding to the abrupt optical input.

10. The controlling method for use with the variable attenuators as set forth in claim 8,

wherein the feed-back circuit maximizes the attenuation amount of a variable attenuator assigned to an optical signal component of an unused wavelength.

IX. EVIDENCE APPENDIX

Not applicable.

X. RELATED PROCEEDINGS APPENDIX

Not applicable.